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Sierra Club CA Comments on LD EVSE Pilot Allocations

Additional submitted attachment is included below.

January 6, 2020

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California Energy Commission
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Submitted via docket at:
https://efiling.energy.ca.gov/Ecomment/Ecomment.aspx?docketnumber=20-TRAN-04

Subject: Sierra Club California Comments re: Light-Duty Electric Vehicle Infrastructure Allocation Workshop December 17, 2020

Dear Mr. Wenzel,

We would like to thank the CEC for this excellent workshop, the potential projects it has put forward for consideration, and for inviting us to present our comments, which follow.

A. **The Top Priority for Vehicle Infrastructure Allocation: Electric Vehicle Service Equipment (EVSE) for Multi-unit Dwellings (MUDs)**

We believe that the highest priority area that vehicle infrastructure allocation should address is advancing EVSE in multi-unit dwellings (MUDs). The Commission should allocate a substantial portion of available grant funding – perhaps even as much as 50%.

Since a substantial portion of Californians (upwards of 50%) live in MUDs, not having easily available EVSE where they live poses a high barrier to EV adoption. Achieving high EV adoption for people living in MUDS is a fundamental requirement if we are to reach overall statewide adoption goals. While there are other alternatives, having convenient and easily accessible EVSE where people live and where their vehicles can be charged overnight is key to ultimately getting high EV adoption. Further, a substantial percentage of people living in MUDs are in disadvantaged communities and are people of color. Making EVs available is critical to ensuring equity in access to EVs and all the benefits they offer to individuals and those living in these communities.

Another key reason why EVSE in MUDs must be high priority is because it can be very hard to accomplish. Some of the obstacles to achieving EVSE in MUDs include: property owners with little time or resources to implement a project and who are resistant to having any additional responsibility to maintain and manage the utilization of these systems; electrical panels with limited or no capacity to support the additional load; inadequate electrical service to the panel; scarcity of capital to cover the up-front costs; and tenants who may have "charger anxiety" (i.e. the concern that will they be able to reliably access a charger when they need it, have it work, and provide the level of power they expect, etc). A well-designed grant project could identify optional and best practice solutions to these problems and smooth the way for broader acceptance of EVSE in MUDs.

We congratulate Ecology Action on their excellent East Bay Community Energy grant funded project, "Innovation in Electric Vehicle Charging for Multi-unit Dwellings."[1] We recommend that CEC staff review this report in detail to help inform the type of projects it considers for MUDs.

We also recommend that the CEC go beyond just a capital project to install EVSE in one or more MUDs and take a more comprehensive and strategic approach to this issue with the objective of having as a deliverable, a model design and implementation guide with best practices. One approach could be to have three grant-funded projects. One using smart outlets for Level 1 chargers in an "affordable" MUD in a disadvantaged community (DAC), one Level 2 networked project for an affordable MUD in a DAC and one Level 2 networked project in a market rate MUD.

Some of the principles that should guide and be a deliverable requirement of any grant funded project are:

1. Define objectives that tenants have and how the program can best address these – e.g. they always want to have an assigned parking spot with a charger so they always know they can charge their EV there, has to be easy to gain access to the charger and to pay for usage, etc.
2. Define objectives of property managers and how to address these – e.g. they don't want to have increased management responsibility for such activities as re-assigning parking slots, EVSE maintenance, collecting fees from tenants for the EVSE use or keeping track of how much electricity tenants use for charging and billing them.
3. Where third-party electric vehicle service providers (EVSPs) may be involved in the installation and/or long-term maintenance and management of these systems, identify what are their objectives and which business models can make the project work.
4. Establish cost-effective planning – e.g. by educating property owners of expected EV adoption statewide and at their properties over the next 10 to15 years and how to best plan for this. For example, according to CARB's draft Mobile Source Strategy (MSS)[2], by 2025 there could be up to 2.6 million plug-in vehicles (EVs

[1] https://ecoact.org/ea2020/wp-content/uploads/2020/11/Ecology-Action_Innovation-in-EV-Charging-for-MUDs_11.20.2020.pdf
[2] https://ww2.arb.ca.gov/sites/default/files/2020-11/Draft_2020_Mobile_Source_Strategy.pdf

and PHEVs) or 10% of light duty (LD) vehicles on the road in the state, by 2030 there could be about 8 million or 30% and by 2035, about 14 million or 50%. This might suggest that the project should provide chargers for at least 10% of parking spaces by 2025, 20% by 2027, 30% by 2030 and so on. Then as the property owners work with EVSPs or qualified electricians to design and install their systems, some long-term planning for additional phases can be done to make the most efficient use of resources. EVSPs are already gaining significant experience in planning long term EVSP projects in phases for fleets such as transit agencies.

5. Gather and document utilization and economic data as well as surveys from tenant EV users and property owners. This data should be collected over at least two years and analyzed annually to inform any adjustments that need to be made and lessons learned that can be included in updates to the best practices guides.
6. Involve multiple partners from different stakeholder domains – e.g. similar to the concept used in the Volvo Lights project. These partners would work together and be led by a project manager to both manage the project and document everything for the benefit of the public going forward with future projects.

B. Pilot Projects to Address Other Needs

Developing and documenting the business model used in each of the following pilot projects will likely provide the most benefit – much more than just successfully installing the hardware. Business model attributes that address such things as the EV owner user interface; the ongoing monitoring, updating and maintenance of the system; designing and managing the project; and networking the hardware. It may be that CEC working with the grant awardees could assist in this documentation process and/or describe and require such business model documentation in the deliverables for the projects.

It may be that only one or two projects in each of the areas suggested below would be sufficient to gain maximum value for the least cost.

1. DCFC Charging Plazas at Airports for TNCs, Taxis, Shuttles and Airport Customers.

Since TNCs handle such a large portion of transit today, and the most frequent use is travel to and from airports, doing a pilot DCFC plaza at airports should be a high priority project. We recommend installing high speed DCFC chargers with 350 kW power.

One of the advantages to using high power, is that the charge dwell time is much shorter and you can have more turnover in a given period of time requiring fewer numbers of chargers and a smaller size of expensive real estate to serve the needs of a given number vehicles and charging sessions. These plazas should also be considered for use by taxis, airport shuttles and airport patrons who could get a quick charge on their way home. A combination of low-cost level 1 chargers in airport parking lots along with a DCFC plaza could cost effectively meet the growing needs of airport users with EVs.

For a given amount of available funding, this approach could provide many more chargers serving more patrons than could be provided with much more expensive level 2 chargers. However, having some Level 2 chargers for patrons with short trips (i.e. departing and returning on the same day) could still be helpful. This kind of a pilot should combine CEC grant funds with a substantial portion of funds contributed from other stakeholders such as utilities, airports, the FAA and other entities because these will be expensive projects. The purpose of the CEC grant will be to act as a catalyst but not necessarily cover all costs for the projects.

2. Alternate Home Charging – Curbside

A combination of curbside charging along with DCFC plazas could be an alternate home charging model. This could be a way to offer charging for EV owners who do not have access to charging at their domicile. A key part of any curbside level 2 pilot project would be selecting the business model and software application to manage the access and billing to these chargers. EV owners would need the ability to reserve a curbside charger in advance and potentially for many days or weeks in advance to mitigate charger anxiety, and have easy access to connect, charge and pay. Several existing EVSP network operators have software that could be utilized for this if properly set up. The ability of the EV user to easily locate access to this management software will also be a key to success.

3. VGI including V2G and V2X Charging Pilot Projects

These applications offer many potential cost-effective benefits for several grid services, enhanced resiliency and financial benefits to EV owners, grid operators and ratepayers. A pilot project for each of these two broad applications could demonstrate how such applications accomplish these benefits and serve as a model for their expanded use. We would also recommend the CEC develop and publish a list of terms, acronyms and definitions in this space which can be confusing with all its variants.

4. Wireless Charging Pilot

Now that SAE has established standards for wireless charging at up to a useful 11 kW power level, this would be an excellent time to do a pilot project for light duty vehicles to demonstrate this capability. This could be the beginning of the migration to wireless charging with all the benefits in its own right as well as a method to support autonomous, automatic charging.

5. Rural Charging

Once the AB 2127 report is released, it should provide useful information on the EVSE needs to support rural charging, the extent and locations of gaps, and suggest the highest priority needs to fill these gaps. Then an analysis could be done to select one or two areas where access to grid services is either not available at all or only at a low power level. This project could then be designed to provide solar, storage and a few DCFC chargers that could meet needs and demonstrate resiliency under grid outage conditions.

Sincerely,

Daniel Barad, Policy Advocate
Ray Pingle, Lead Volunteer, Clean Transportation

Cc: Jennifer Allen